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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,937	09/26/2003	Timothy B. Stockwell	ABIOS.042A	9457
22896 7590 05/02/2007 MILA KASAN, PATENT DEPT. APPLIED BIOSYSTEMS 850 LINCOLN CENTRE DRIVE FOSTER CITY, CA 94404			EXAMINER ZHOU, SHUBO	
			ART UNIT 1631	PAPER NUMBER
			MAIL DATE 05/02/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/672,937

Applicant(s)

STOCKWELL ET AL.

Examiner

Shubo (Joe) Zhou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 19-42 and 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/27/06.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

Applicants' amendments and request for reconsideration in the response filed on 2/2/07 are acknowledged and the amendments entered.

Claims 1-44 are currently pending, but only claims 1-18 and 43 are under examination. Claims 19-42 and 44 have been previously withdrawn from consideration.

#### ***Information Disclosure Statement***

The Information Disclosure Statement filed 6/27/06 has been entered and considered. Initialed copies of the form PTO-1449 are enclosed with this action.

#### ***Claim Rejections-35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-18 and 43 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

This rejection is newly applied.

At least one embodiment of the claimed invention is drawn to a computer process comprising sequence information, evaluating the sequence information to identify ambiguous bases present within the sample sequence information by applying a rule based criteria, and evaluating the quality and coverage of the sample sequence information.

The following analysis of facts of this particular patent application follows the rationale suggested in the "Interim Guidelines for Examination of Patent Applications for Patent Subject

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Matter Eligibility" (OG Notices: 22 November 2005, available from the US PTO website at

<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/og200547.htm>).

The Guidelines states:

*To satisfy section 101 requirements, the claim must be for a practical application of the § 101 judicial exception, which can be identified in various ways (Guidelines, p. 19):*

- *The claimed invention "transforms" an article or physical object to a different state or thing.*
- *The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.*

In the instant case, at least one embodiment of the claimed invention merely manipulates data sequences and performs a series of calculations by algorithmic means. Thus, the process does not seem to transform an article or physical object to a different state or thing outside a computation device.

Furthermore, the invention does not produce a useful, concrete and tangible result. Specifically it does not produce a tangible result. Since the process merely manipulates data sequences and performs a series of calculations including application of mathematical functions without using or making available for use the results of the manipulation to enable its functionality and usefulness to be realized.

### ***Claim Rejections-35 USC § 112***

The following is a quotation of the **second** paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-18 and 43 are rejected under 35 U.S.C. 112 , second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The metes and bounds of the limitation “reportable ranges” for the sample sequence information recited in claims 1 and 43 are unclear. The term "reportable" is a relative term which renders the claims indefinite. The term is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Without an explicit definition and a standard for ascertaining the requisite degree, one of ordinary skill in the art would not know what ranges of sequence information are reportable and what are not.

This rejection is reiterated from the previous Office action. Applicant argues that the claims have been amended to include “wherein the reportable ranges comprise base sequence ranges related to the at least one sample, usable for comparison matching,” and the rejection is overcome. This is not found persuasive because the metes and bounds of the amended claims are still not clear for the following reasons:

First, even though the “reportable ranges” comprise the information specified, given the openness of the word “comprising,” one skilled in the art would still not know whether or not a particular range of sequence information other than those specified is reportable absent a clear standard for ascertaining the scope of the claimed invention.

Second, the added limitation makes it unclear what base sequence ranges are usable and what are not for comparison matching.

Furthermore, the newly added term “usable” is also a relative term which renders the claims indefinite. The term is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Without an explicit definition and a standard

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for ascertaining the requisite degree, one of ordinary skill in the art would not know what ranges of sequence information are usable for comparison matching.

The metes and bounds of the limitation "major and minor bases" within the sample sequence information recited in claims 2, 5, 8, 11, etc. are unclear. The terms "major" and "minor" are relative terms which render the claims indefinite. The terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Without an explicit definition and a standard for ascertaining the requisite degree, one of ordinary skill in the art would not know what bases of the sequence information are major or minor because a base can be said to be a major base when it represents the majority of the bases or minor when it does not. Or a base can be said to be a major base when it is located in the major groove, or a minor base when it is located in the minor groove, of the double stranded DNA helix from which the base comes.

This rejection is reiterated from the previous Office action. Applicant's arguments have been considered but they are not deemed persuasive. Applicant argues that the terms major and minor bases are used in the art such as the IDS document "Comparison of PowerPlex<sup>TM</sup> 16, PowerPlex<sup>TM</sup> 1.1/2.1, and ABI Ampf/STR<sup>TM</sup> Profiler Plus<sup>TM</sup>/COfiler<sup>TM</sup> for Forensic Use," which refers to major and minor peaks. This is not convincing because major and minor peaks therein are different from the major and minor bases in the instant claims. Applicant further argues that page 16 of the instant specification describes the various peaks, and thus the major and minor bases are adequately clear. This is not persuasive because the entire page 16 of the specification, or anywhere in the specification for that matter, does not define, or not even mention the term major base or minor base.

Clarification of the metes and bounds of the claims is requested.

### ***Conclusion***

No claim is allowed.

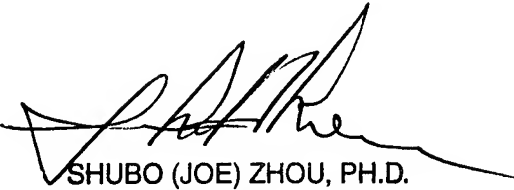
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shubo (Joe) Zhou, whose telephone number is 571-272-0724. The examiner can normally be reached Monday-Friday from 8 A.M. to 4 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, Ph.D., can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Patent Analyst Tina Plunkett whose phone number is (571) 272-0549.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as

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general patent information available to the public. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

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SHUBO (JOE) ZHOU, PH.D.  
PATENT EXAMINER